

On the Approach



Administrator's Message



Dr. Jeffrey DeCarlo Massachusetts Department of Transportation (MassDOT) Aeronautics Division Administrator.

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Happy "almost-Summer!"

As I write this article, it is mid- June, and we are thinking that, finally, hopefully ...the weather may actually warm-up, and dry-up! However, enough about the weather, let's get into the meat-of-the-matter.

Although the construction season is in its early stages, our Fiscal Year 2019 aviation projects are coming to a close. Lots of FY-end work being cranked-out and there is a long list of great CIP projects. We were fortunate to receive some FAA Supplemental Funding in FY19, and will be getting some additional funding in FY20. In addition, we operationalized a large piece of our project management software, and continued to improve our drone capabilities. Most importantly for this edition, we completed an airport economic impact study that reported outstanding news results.

Economic Impact Study

The triennial airport economic impact study has been completed. The study reported 199,000 jobs, \$7.2B in payroll

and \$24.7B in economic impact! To compare the results with 2014, there were increases of 23% in employment, 19% in payroll, and 49% in total output. To use a bit of slang to describe a rating of beyond outstanding, the airport economic impact results were absolutely "fan-tab-u-lous!!

With respect to reporting, our study team utilized an industry accepted economic impact model to accomplish the study. The model that was used is the same one that was used in previous studies; a critical point to ensure an apples-to-apples comparison. Yes, it is absolutely critical that we measure in accordance with the model. However, often times we have a tendency to lose the interest of our audience when we spew these reporting metrics. We all know that when we see someone's eyes glaze over, it is usually because they are bored, or just not interested. I have seen this response to economic impact studies many times.

So, to nip the glazed-eye syndrome in the bud, we thought about a situation a few years ago when we heard some sen-

Administrator's Message (Continued)

ior leaders' comment that economic impact numbers are often difficult to understand. They suggested that it would be beneficial to find a way to convey the economic impact in a compelling and understandable way. For example, among other elements of the study, it may not be intuitively obvious as to what "total output" means. If total output goes up, it is probably a good thing. However, many people really don't care to know what it means, and definitely don't want to study -the-study, or to understand the esoteric details.

So, for this report we tried to "make it real," by capturing airport stories to communicate how important airports are to the people in Massachusetts. Denise Garcia led this Airport Economic Impact Study, and was able to uncover many compelling stories, some of which she will share in an article in this edition.

Fly Safe and have a great Summer!

MassDOT Aeronautics Presents at Massport Logan STEM Expo



MassDOT Aeronautics Division attended and presented at the 2019 Logan Aviation and Maritime STEM Expo. Over 2,100 middle and high school students and teachers from 42 schools in the greater Boston area attended.

The Expo gave students an opportunity to meet with professionals in the aviation industry and to learn about careers and educational opportunities in science, technology, engineering, aviation and mathematics.

MassDOT Aeronautics set up their flight simulators and displayed their UAV's (drones) along with virtual goggles.

Many single engine piston aircraft were on display from Lawrence Airport, Fitchburg Airport and Beverly Airport with eager pilots willing to share information on their airplanes, instruments, as well as basic flight principals to interested students.

MassDOT's Initiative to Reduce Carbon Emissions, Noise and Reap Long-term Savings

This spring, 10 public-use airports around Massachusetts, including New Bedford Regional Airport and Pittsfield Municipal Airport, are taking a more environmentally friendly approach to sustainability. The Massachusetts Department of Transportation's (MassDOT) Aeronautics Division has moved forward with funding several pieces of commercial-grade, battery-powered landscaping equipment procured through Statewide Contract FAC88 to support their Vegetation Management Program (VMP) in an environmentally friendly and economical way.



Michael Garrity, Project Manager and Environmental Analyst at MassDOT's Aeronautics Division, explained, "This equipment will help reduce carbon emission, support noise reduction initiatives, and contribute to the MassDOT sustainability efforts. These alternatives to

gas-powered equipment offer health and environmental benefits, long-term savings opportunities, and are consistent with the Commonwealth's climate change initiatives."

MassDOT was first exposed to these options after trying out several pieces of equipment at an FAC88 Statewide Contract event in Lexington last fall. The event unveiled the addition of commercial-grade, battery lawn equipment to the FAC88 Lawns and Grounds Equipment Statewide Contract and gave attendees the opportunity to try out various pieces of battery-powered lawn equipment offered by newly awarded FAC88 Category 13 vendors.

Garrity asserts, "After attending the event in Lexington, we sent out a survey to our airports that participate in the VMP program to see if there was interest in obtaining commercial-grade, battery-operated landscape equipment, and the response was overwhelmingly, 'Yes'."

Having moved forward with their FAC88 purchases, 10 MassDOT public-use airports will be using a variety of new lower-emission equipment this spring – to include chainsaws, backpack-style blowers, pole saws, and trimmers.

Additionally, a solar charging canopy mower was purchased for use at the Turners Falls Municipal Airport, which also is converting their existing gas-engine tractor to propane (through FAC88, Category 2 – Tractor Accessories) – a low-carbon alternative fuel.

Learn more about these solutions in the FAC88 Contract User Guide or Contact the COMMBUYS Help Desk: COMMBUYS@mass.gov or 888-MA-State (627-8283) .

This article is republished from the Operational Services Division (OSD) newsletter, "Buy the Way")

The Massachusetts 2019 Statewide Airport Economic Impact Study

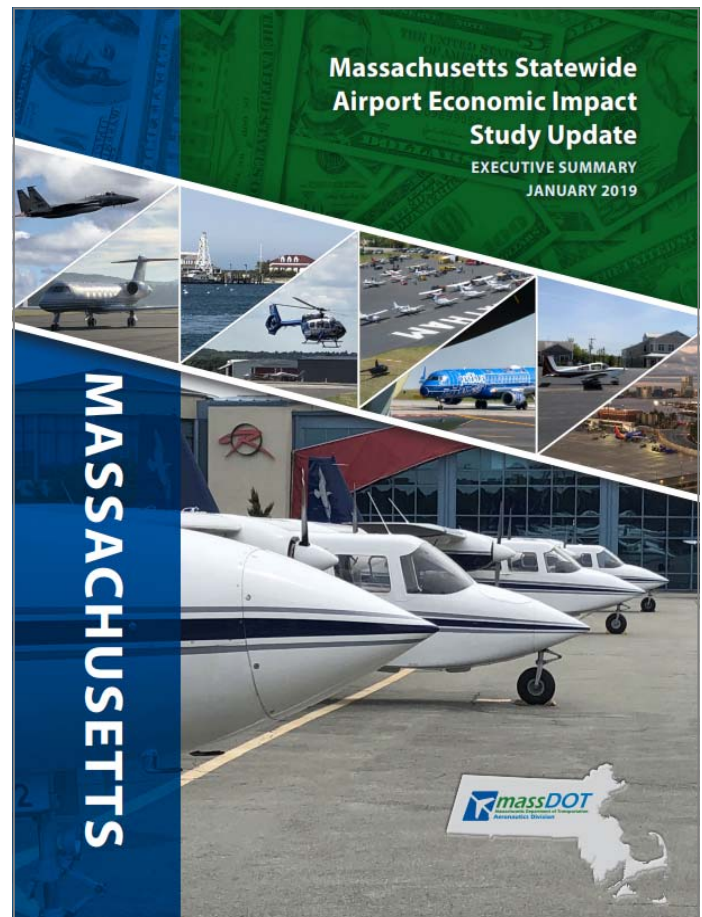
MassDOT would like to thank everyone who participated in the survey effort for the January 2019 Statewide Airport Economic Impact Study and we're pleased to share with you the encouraging results that this study brought to light. The latest findings (based on 2017 data) revealed that when all the impacts of the Commonwealth's public use airports and associated military air facilities are added together, they generate approximately \$24.7 billion in total economic output, create close to 200,000 jobs, and support an annual payroll of over \$7.2 billion. Since the completion of the preceding 2014 study, the economic impact of our public use airports has increased by approximately \$8.2 billion (+49%) in total output, added 37,000 jobs (+23%), and increased annual payroll by \$1.1 billion (+19%). This study demonstrates how aviation drives economic growth, and details how Massachusetts system of public use airports serve as a well-coordinated system that effectively serve every geographic region and market in the Commonwealth.

Massachusetts' airports account for significant tax revenue. Over \$1.0 billion in total airport-related taxes were collected in Massachusetts in 2017. Strategic investments at our public use airports from the state and Massport also had an excellent return on investment during this period. This study demonstrated that our airports offer a competitive business advantage, and for every \$100 spent by aviation related businesses, an additional \$56 is created as a multiplier impact that boosts spending, payroll, and employment benefits improving the quality of life in Massachusetts for all of its residents.

Massachusetts' airports have stories to tell and each is unique in its own way. This report highlights many of the distinct aviation activities that take place every day across the Commonwealth through case study analysis on business/airport synergies. The study also includes a discussion on the scope of the drone economy both na-

tionally and in Massachusetts, with an emphasis on the comprehensive MassDOT UAS testing operations at Joint Base Cape Cod, and the drone programs underway at UMass and Northeastern University.

As a component of the 2019 Statewide Airport Economic Impact Study, we've also completed (3) videos entitled: Aviation Education, State Partnerships and Economic Development.



To learn more about the Statewide Airport Economic Impact Study, the executive summary can be found at www.mass.gov/economic-impact-study. Article submitted by Denise Garcia, Director of Aviation Planning, MassDOT Aeronautics Division.

2019 Real World Design Challenge State Winner: Canton High School



The 2019 First Place Massachusetts Real World Design Challenge State (RWDC) Champions are the “Canton Bulldogs” from Canton High School. Canton Bulldogs team members include: Austin Cox (Team Leader), Guy Blochstein, Andres Castro, Devin Chen, Ryan Carney and Dhanush Narayana. Coach Ms. Kathleen Healey and Mentor William McGonagle. 2019 RWDC rankings were:

- ♦ Canton High School, first place
- ♦ Newburyport High School, second place
- ♦ Winchester High School, third place

Notebooks were scored by a team of aerospace professionals from Embry-Riddle University led by Professor Rob Deters Ph.D. Canton High school had the top scoring state engineering notebook.

The RWDC is an annual competition that provides high school students, grades 9 – 12, with the opportunity to work on real world challenges, unmanned aerial vehicles and unmanned aerial systems have been the focus lately with many projected beneficial uses and applications. The challenge is aimed at enhancing science, technology, engineering and mathematics (STEM) education in high schools. The students are provided free access to professional engineering software by PTC.

Just take a look at this year’s 2019 challenge: An urban city is requesting an Unmanned Aerial Vehicle and a profitable business plan along with the Unmanned Aeri-

al Vehicle (UAV) to monitor vegetation throughout the city.

The goal of the team is to create a UAV and business plan to provide the city with so that they can monitor the vegetation throughout a single year. The drone that was created is modeled after a conventional aircraft, which the team learned is the best design for continuous flight and control of various flaps and ailerons to maneuver the pitch, yaw, and roll, of the aircraft effectively. The design also includes a four-motor design from conventional civilian drones, which the team learned is the best design (other than a single-motor design, like helicopters) for vertical takeoff.

The design also includes many onboard electronics to ensure that the drone is able to maneuver and follow various requirements. The drone is designed with safety in mind and includes a parachute in case of an emergency landing, and both audio and visual cues to provide any forms of signaling that would be required at any part of the mission.

The drone is equipped with many electronics to provide both information and control of the aircraft, as the drone must abide by various requirements such as maximum airspeed and altitude thresholds.

Article by Steven Rawding, Aviation Planner, MassDOT Aeronautics

New modules in NASAO's Online Aviation Training coming soon!

In November 2018 NASAO (National Association of State Aviation Officials), and the NASAO Center for Aviation Research and Education, launched the Online Training Program for State Aviation Officials and Airport Managers, Staff and Commission Members. The program is the result of months of research and coordinated effort with state aviation departments of transportation, aviation industry partners, and the Federal Aviation Administration. The collaboration has resulted in a highly developed program, designed to address key cornerstones of learning for state aviation employees and airport stakeholders.

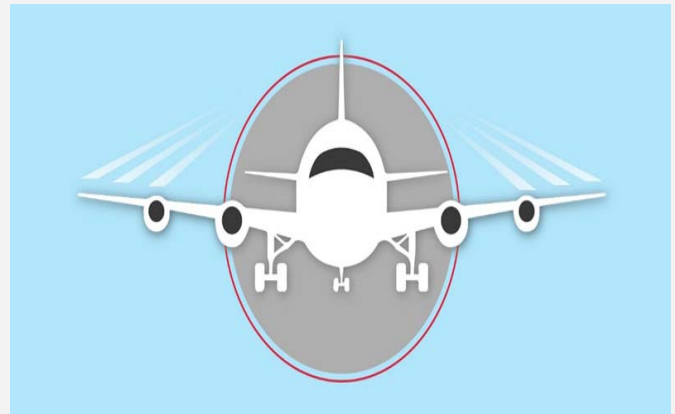
Only the first two modules have been released thus far, and aviation professionals are encouraged to complete them in anticipation of modules three and four launching Summer 2019!

The seven modules comprising the training are: 1 – Being Aware of the Airport Environment; 2 – Appreciating Key Partners; 3 – Aviation Planning 101; 4 – Envi-

ronmental Planning 101; 5 – Engineering 101; 6 – Essentials of Project Funding; and 7 – 1-800-Citizen Hotline

NASAO members currently have complimentary access to the trainings and are highly encouraged to make use of this comprehensive educational opportunity.

Contact: Dominique Khan, dkhan@nasao.org Marketing & Communications Manager, NASAO



Finance Division Update

The Massachusetts Department of Transportation / Aeronautics Division Finance Unit is responsible for performing all activities related to the Commonwealth of Massachusetts Aircraft Registration Program. Pursuant to M.G.L. c. 90, § 49(b), every person owning a civil aircraft which must be registered with the FAA and which is based in the commonwealth for more than 60 days shall register their aircraft with the Aeronautics Division on an annual basis.

The Aeronautics Division establishes the list of eligible civil aircraft to be registered by reviewing the Listing of Based Aircraft Report submitted by the Airport Managers in March and September of each year. The Aeronautics Division creates and mails the Annual Aircraft Registration Renewal notices in October of each year

to the identified owners of the eligible civil aircraft to be registered. In addition, the Aeronautics Division performs dunning and collections exercises for all non-payment accounts. In FY2019 (thru 05/03/2019) Aeronautics Division registered 1,878 aircraft and collected \$341,570.

The Massachusetts Department of Transportation / Aeronautics Division Finance Unit is also responsible for managing the fiscal activities of the Aircraft Dealer Registration Program and the Airport Contracted Inspection Program. Article by Rudy Giannandrea, Accountant III, MassDOT - Aeronautics Division

Gulfstream Holds Annual “Walk in My Boots” Program for Westfield Technical Academy Students



On April 23 2019, Gulfstream hosted the 7th “walk in my Boots” program. Yes, It’s hard to believe the program started in 2013. Twelve high school students from the Westfield Technical Academy received hands-on job shadowing with Gulfstream technicians and a plant tour . The effort is part of the FAA’s “Walk in My Boots” initiative aimed at introducing high school students to aircraft maintenance.

In early May, Westfield Technical Academy identified students with an interest in aviation. The students came from a diverse pool of vocational tracks including Automotive, Business, Allied Health, IT, and from the aircraft maintenance technology (AMT) program.

The students arrived at Gulfstream at 8:00 and spent the day job shadowing their assigned technicians. The event included a pizza lunch where the students had the opportunity to share what they learnt during the experience.

The “Walk in my Boots” program is a collaborative effort between FAA's STEM AVSED and Flight Standards offices. The program connects high schools

with aviation maintenance facilities through a job shadowing experience, designed to address the shortage of skilled workers in the aviation maintenance field.

The Westfield Technical Academy’s AMT program utilizes both lecture and extensive hands on training, in labs and on aircraft, to meet the requirements of Federal Aviation Administration (FAA), Part 147. The program is comprised of three parts; General, Airframe and Power Plant. Some of the many subjects that students will receive instruction in include; Basic Electricity, Aircraft Drawings, Weights and Balance, Ground Operation and Servicing, Corrosion Control, Assembly and Rigging, Airframe Inspection, Landing Gear Systems, Hydraulic and Pneumatic Systems, Instruments, Communication and Navigation Systems, Fuel Systems, Fire Protection, Reciprocating and Turbine Engines, Ignition and Starting Systems, Exhaust and Reverser Systems, Propellers and many others.

AMT students are required to enroll in the program for all four of their high-school years. The program is open

only to freshmen, and they must remain in the program to qualify for the required Federal Aviation Administration testing to become technicians.

MassDOT Aeronautics Division would like to give a big “thanks” to Fran Ahern, Gulfstream BAF General Manager, Surlener Waites, Manager, HR business

partner and all the Gulfstream employees for their continued sponsorship of this program. Article by Steven Rawding, Aviation Planner, MassDOT Aeronautics Division

Massachusetts Airport Management Association (MAMA) 2019 Annual Conference

The 2019 Massachusetts Airport Management Association (MAMA) 46th Annual Conference will be held on Monday and Tuesday, October 7-8, 2019.

The event will be held at the majestic Endicott College located in Beverly, MA.

Endicott College is a beautiful campus. It's a picturesque, 235 acre oceanfront campus situated 20 miles north of Boston.

Article by Lorraine Bohannon, Program Coordinator, MassDOT Aeronautics Division.



Guidance for Engineering and Construction Projects

From time-to-time, the Federal Aviation Administration (FAA) releases new versions of advisory circulars. Some of the key advisory circulars pertaining to design and construction of airport infrastructure that were recently released are:

- FAA AC 150/5370-10H - *Standards for Specifying Construction of Airports* (December 2018)
- FAA AC 150/5340-30J - *Design and Installation Details for Airport Visual Aids* (February 2018)
- FAA AC 150/5370-2G - *Operational Safety on Airports During Construction* (December 2017)

Federal Contract Provisions for AIP and Obligated Sponsors

Please use the following guidance when preparing documents for construction projects, equipment purchase

projects/contracts, property projects, professional service contracts, posting solicitations for projects/consultants, and non-AIP funded contracts/projects.

Use the latest version of the AC on the FAA website.

Use the Table 1 to determine which provisions/clauses are applicable to your project and solicitation. Confirm dollar threshold has been met for provision to be included.

Only include the required language and follow the instructions on where this language should be inputted into your documents and/or contracts.

Some language is required to be inserted into the solicitation (or other section) rather than a standalone section

Do not insert the entire word document into your project documents

For non-AIP funded contracts/projects, there are a few required provisions to be included. Please re-

view these provisions/clauses and include them for state- or local- funded projects at federally obligated airports. Submitted by Tom Mahoney and Owen Silbaugh, MassDOT Aeronautics Engineering Division

Bridgewater State University Hosts Career Fair for Aviation Students



Bridgewater State University's (BSU) Department of Aviation Science held its second annual Aviation Career and Information Expo April 13th at the Flight Training Center at New Bedford Regional Airport.

Approximately 70 students and guests had the opportunity to speak to, and network with industry representatives to learn about career opportunities in the commercial, corporate, government, and military fields of aviation.

Representatives from the airlines, industry, government agencies, and the military were in attendance including: the Aircraft Owners and Pilots Association (AOPA), Air New England, BSU Flight Team, Endeavor Air, Ex-

pressJet Airlines, MassPort, Republic Airways, Tradewind Aviation, Alpha Eta Rho, Envoy Air, MassDOT, PlaneSense, Textron, and Wiggins Airways as well as representatives from all branches of the military.

MassDOT was pleased to support this worthy and informative event. The Aeronautics Division is committed to promoting aviation education and working together with individuals, groups, schools, airports and businesses to create a "pathway" for the citizens of the Commonwealth that may one day lead them to rewarding and well-paid jobs in the aviation industry.



Massachusetts Students Compete in the 2019 International Aviation Art Contest

The 2019 International Aviation Art Contest was sponsored by the National Association of State Aviation Officials and multiple partners from the aviation industry. "My Dream to Fly" was this year's theme. Students were

encouraged to use their imagination and express themselves thru art on the wonders of flight. Students from ages 6 to 18 were eligible to participate in the art contest.

At the state level the entries are judged by the Aeronautics Division staff. The staff looks forward to the judging! All entries receive a certificate, and the top three entries from each age category are forwarded to Washington, D.C. for the National judging. The National winners are then forwarded to FAI in Switzerland for final judging.

This year's state winners are listed below:

Category I ages (6-9)

- First place – Bria Pavlisko, Saint Margaret's Regional School, Buzzard's Bay
- Second place – Lindsey Hamel, Saint Margaret's Regional School, Buzzard's Bay
- Third place – Avery Okon, Saint Margaret's Regional School, Buzzard's Bay



Category II ages (10-13)

- First place - Mariah Pillsbury, Saint Margaret's Regional School, Buzzard's Bay
- Second Place – Michael Maynard, Saint Margaret's Regional School, Buzzard's Bay
- Third place – Bridgette Ellis, Saint Margaret's Regional School, Buzzard's Bay



Category III ages (14-17)

- First place – Jidapa Janpathompong , William Diamond Middle School, Lexington
- Second place – Yinshu Cai, Cushing Academy , Ashburnham
- Third place – Olivia Boutin, Plymouth South High School , Plymouth



New Administration Buildings underway at Plymouth, North Adams, and Norwood Airports



Plymouth Airport's new Administration building is approximately 75% complete. Building completion coincides with the 400th Anniversary of the Pilgrims landing in 1620. Some quick facts: the project began construction in June 2018 with substantial completion scheduled in June 2019. Major elements include: Airport Manager's Office, Conference Room, Pilots Lounge, Tenant Spaces and an Airport Restaurant.



North Adams Airport recently moved a donated medical building to serve as the Airport's administrative offices. Quick facts: The building footprint is approximately 5,300 square feet, relocation of building occurred in January 2019 and renovations for the building are on-going. Substantial Completion scheduled for June 2019.



Norwood Airport's existing Snow Removal Equipment (SRE) Building is currently being renovated to add airport administrative office space. Quick facts:

- The renovations includes a 4,000 square foot fit-out, including a new 2,000 square foot mezzanine level and maintenance area on the first floor, as well as new mechanical systems throughout the entire building and exterior cladding modifications on the North and East facades.
- Substantial completion is scheduled for June 2019

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Massachusetts Department of Transportation
Aeronautics Division
Logan Office Center
One Harborside Drive
Suite 205N
East Boston, MA 02128
617-412-3680

www.mass.gov/massdot/aeronautics

Send suggestions for stories or comments to:

Nathan.Rawding@dot.state.ma.us



<https://www.mass.gov/orgs/aeronautics-division>

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